

Leadership in Collaborative Emergency Management and Resilience

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ABSTRACT

Emergency management and resilience are key concepts and functions that are vital for mitigating risks of hazards and reducing the impacts of disasters. Public sector leaders within the emergency management and resilience domains play a critical role in leading the organization and its staff and partners in achieving these goals of risk mitigation and disaster impact reduction. This research investigates the skills and competencies that emergency management and resilience leaders need to be successful in collaborations to deal with emergencies and disasters today and in a post-COVID world. The study will employ a postpositivist case study design using interviews as an instrument to gain deep understanding of the important skillset and competencies identified by emergency management and resilience professionals. The study samples a target population of emergency management leaders and resilience professionals from the Mid-Atlantic region through snowball sampling. The sample will include emergency management and resilience professionals at the director or assistant director level (or equivalent), representing state, regional, and local government agencies and related functions in the private and nonprofit sectors. The study will develop understanding, based on the practices of emergency management and resilience professionals, of the critical skills and competencies needed to be effective in mitigating, preparing for, responding to, and recovering from disasters. Results of the research will provide insights for leadership development in these two domains.

INTRODUCTION

Communities across the U.S. and worldwide are facing increased threats of natural hazards (earthquakes, hurricanes, wildfires, etc.) and technological hazards (dam failure, power loss, hazardous materials incidents, etc.), in part due to effects of climate change and environmental degradation. Simultaneously, development and changes to the built and natural environments have made more people vulnerable to the impacts of hazards. For example, shoreline development and urbanization along the coast have put large portions of the population vulnerable to coastal hazards such as hurricanes and tsunamis. The collision of growing risk and increased vulnerability lead to more severe emergencies and disasters.

In the short-term, mitigation, preparedness, response, and recovery activities associated with emergencies and disasters fall within the emergency management realm (Petak, 1985). Mitigation focuses on reducing the risks and impacts of a hazard. Preparedness includes proactive efforts to increase the capability to respond. Response is related to operations during the emergency and recovery involves restoration and rehabilitation community after an emergency.

Longer term approaches to mitigation and adaptation have more recently risen to prominence and made resilience an important domain and improving resilience as a critical function. Resilience, broadly defined, is concerned with how a system – a neighborhood, locality, group of people, infrastructure, etc. – can deal with and recover from disturbance and surprise (Comfort, Boin, & Demchak, 2010; Intergovernmental Panel on Climate Change, 2012). Resilience focuses on building the ability to persist in the face of acute disruptions and chronic stresses, through activities such as assessing risks, mitigating impacts, and planning for longevity.

by adapting, evolving, and making informed short-term and long-term investments (J. E. W. Yusuf, St. John III, Covi, & Nicula, 2018).

Given the increased risk, vulnerabilities, and consequences of hazards, the emergency management domain is highly visible to the public and there is public expectation of effective emergency management leadership before, during, and after emergencies or disasters. Research and practice underscore the need for effective emergency leadership across the four stages of emergency management to safeguarding lives, mitigating damages and loss, and maintaining community wellbeing (Basher, 2008; Caro, 2015; Henstra, 2010; McGuire & Silvia, 2010). While resilience efforts are more consistent and prolonged over time, effective resilience leadership is expected to ensure long-term mitigation and adaptation that enhance the ability to recover from emergencies and disasters. (J. E. W. Yusuf et al., 2018) point to resilience as “a dynamic process linked to human actors and human agency” (p. 113) and that being resilient hinges on the ability to develop leadership and capacity to adapt, cope, learn, and innovate in response to disturbances and uncertainty.

In this study we seek to better understand what effective leadership in emergency management and resilience looks like. However, recognizing that leadership applies differently in different situations and contexts, we focus specifically on emergency management and resilience leadership in collaborative settings. In terms of emergencies and disaster, emergency managers must collaborate with a multitude of actors and groups from across the whole community. Similarly, resilience professionals must collaborate to pursue resilience-building activities with others across a spectrum of functions within government and with individuals and organizations outside of government. Effective leaders are at the heart of successful collaborations. The purpose of this study is to explore how emergency management and

resilience leaders collaborate and identify the skills and competencies they need to be successful in collaborations related to emergencies, disasters, and resilience. *Specifically, we ask: What are the leadership skills and competencies needed for effective collaborations in emergency management and resilience settings? Further, given the current landscape, we also ask: How has the COVID-19 pandemic changed how leaders address emergency management and resilience issues?*

Context: Collaborations in Emergency Management and Resilience

Research on leadership in emergency management recognizes that concluded different situations needs different competencies and that researchers needs to identify specific contexts for studying leadership (Demiroz & Kapucu, 2012; Van Wart & Kapucu, 2011). (Demiroz & Kapucu, 2012), for example, identified that the needed leadership competencies vary depending on the type of event, the environment, the organization type, and domain of the event. As such, our research focuses on leadership competencies needed by public sector emergency managers and resilience professionals working in collaborative settings. The collaborative environment and the need for collaborations is characteristic of both the emergency management and resilience domains. Furthermore, while we recognize that political actors, such as mayors and governors, also play leadership roles during emergencies, disasters, and in support of broader resilience issues (Jong, Dückers, & van der Velden, 2016; McLean & Ewart, 2020), our research focuses only on agency and administrative leadership.

In the U.S., emergency management at all levels of government involves intergovernmental and intragovernmental relationships among organizations at the federal, state, and local levels (Drabek, 2007; Petak, 1985), and also the involvement of many different

stakeholders including nonprofit organizations, private businesses, community and religious leaders, and academia (Field, Barros, Stocker, & Dahe, 2012; Kapucu, 2009, 2011). As identified by the National Response Framework (Federal Emergency Management Agency, 2011; U.S. Department of Homeland Security, 2019) mitigation, preparedness, response, and recovery from an emergency or disaster is most effective when government collaborate with other partners and stakeholders, including nonprofit agencies, humanitarian aid organizations, and faith-based organizations.

Emergency managers must collaborate vertically across levels of government and laterally across agencies with different emergency management roles, consistent with a whole-of-government approach, and across different sectors – business, nonprofit, and civil society – to ensure a whole-of-community approach (Eller, Gerber, & Robinson, 2018; Kapucu, 2011; Kapucu, Arslan, & Demiroz, 2010; Sobelson, Wigington, Harp, & Bronson, 2015; J.-E. W. Yusuf, Hill, Landaeta Feo, Whytlaw, & Richardson, 2020). As Waugh and Streib (2006) noted, successful emergency management hinges on how well individuals and organizations collaborate.

Resilience similarly requires a collaborative approach built upon the whole-of-government and whole-of-community frameworks. To build resilience, residents, businesses, organizations, and governments must work together to create the capacity to respond and even transform the system (J. E. W. Yusuf et al., 2018). Effective adaptation to climate change, for example, calls for a combination of the whole-of-government and whole-of-community approaches that may include such stakeholders as local, regional, state, and federal governments; faith-based and non-profit organizations; businesses; education, healthcare, and other institutions; and individuals, families, and neighborhoods (J.-E. W. Yusuf et al., 2021).

Similarly, according to the United Nations International Strategy for Disaster Reduction (2012), disaster resilience requires a collaborative effort that includes stakeholders from government, academia, the private sector and businesses, professional groups, community groups, civil society, and residents. Not surprisingly, Demiroz and Haase (2019) identified collaboration, networks, and stakeholders as keywords in the resilience literature focused on public policy and administrative decision-making. For example, research by Fitzpatrick and Molloy (2014) that explores the role of non-governmental organizations in developing community resilience.

LEADERSHIP IN EMERGENCY MANAGEMENT

Collaborative approaches to emergencies and disasters are challenging because the effectiveness hinges on successful integration of efforts across partners in the collaboration, which in turn calls for strong leadership in an environment where power, authority, and responsibility do not necessarily accrue to one organization or one person and decisions cannot be made unilaterally (Taylor, 1984; Pearson & Clair, 1998; Borodzicz & Van Haperen, 2002; Flin, 1996; Smith, 2000). Establishing trusting relationships, processes for reaching consensus, building team spirit, and ensuring mutual understanding are key for successful collaboration.

Kapucu (2011), in looking at core competencies for emergency managers organized these competencies into: (1) intra-organizational competencies, including organizational management, technological competency, and comprehensive and supported decision making; and (2) interorganizational competencies such as those related to leadership, networking, coordination, and collaboration. Given our interest in leadership in collaborative emergency management settings and recognizing that connection between networking and coordination with collaboration, we identified several intraorganizational competencies for emergency

management leaders. These included communication skills; analytical skills; coordination and interoperability skills to manage network, partnerships, and collaborations; and building horizontal, egalitarian, and trustful relationships.

In an analysis of the literature on collaborative emergency management, (Kapucu et al., 2010) identified key themes of networks and partnerships, coordination, communication, and interoperability, that all have implications for leadership. In the collaborative environment, actors and organizations form networks and organizations to overcome constraints and increase the resource base. Through coordination, the collaboration can further reduce redundancies. Communication supports coordination by enhancing mutual understanding and the transfer of information among actors and organizations within the collaboration. Interoperability is key for ensuring partners come together, use their resources together, work together, and talk together. In a similar theme, Demiroz and Kapucu (2012) concluded that cooperation with other stakeholders, flexibility in decision making and operations, adaptability to the environment, and effective communication with other stakeholders and the public are the most necessary leadership competencies.

The importance of coordination and communication, and their connection to leadership were made evident by the Fukushima (Japan) nuclear disaster and the Aceh (Indonesia) Tsunami disaster (Mahmud, Mohammad, and Abdullah, 2020). Poor communication was a significant issue that affected leadership in the Fukushima disaster. In the case of tsunami disaster, there poor coordination and inefficient use of resources characterized incompetent leadership.

Research has also examined leadership competencies for crisis management, which Van Wart and Kapucu (2011) argue is distinct from emergency management. They define crisis management as reserved for unanticipated or unplanned events that cause breakdown in

emergency response, where loss of life or damage is extensive, and time constraints are severe. Yet, they acknowledge that crisis management either builds on or augments emergency management. They identify several crisis management traits, skills, and behaviors that are relevant for leadership in collaborative settings, such as: flexibility, social skills and social adeptness, communication skills, articulating the mission and vision, analytic skills, and willingness to assume responsibility. A key finding is that for crisis management, strong incisive leadership is the dominant mode, rather than the consultative, iterative, process-oriented transformational leadership approach. Their findings suggest that during crisis leaders selectively adapt practices from emergency management, and therefore emergency management leadership practices are still relevant for crisis management.

While Van Wart and Kapucu (2011) did not find support for transformational leadership in crisis management, Karaca, Kapucu, and Van Wart (2012) suggest that transformational leadership, rather than transactional leadership, is needed for collaborative emergency management settings. They identified three important elements of transformational leadership that apply to collaborative emergency management: (1) idealized influence where the leader communicates the vision in ways that encourages commitment and passion through follower trust; (2) intellectual stimulation through generating an environment that allows for new ideas and new vision, and (3) inspirational motivation that supports commitment in followers and builds a sense of teamwork and cohesion around a purpose (Karaca et al., 2012).

Similarly, Lester and Krejci (2007) characterized transformational leaders as using a human relations approach, inspiring a shared vision and mission, and engaging collaborators through a decentralized approach. In addition, research by (Caro, 2015) of emergency management leaders in Canada identified transformational leadership attributes, two of which we

identified as being particularly relevant to emergency management in a collaborative setting. The first is strategic potentiation where leaders build synergistic collaborative networks through positive dialogue, understanding, and trust that motivates and coalesces the multiple stakeholders and collaboratives toward the shared mission. Second, transformational leaders engage individuals, organizations, and communities in service to others as a social value and responsibility. In this context, emergency management leaders articulate this social mission and inspire and engage others in pursuit of this mission.

As just described, several leadership skills and competencies for collaboration have emerged across different studies. These skills and competencies are summarized in Table 1.

Table 1. Summary of leadership skills and competencies for collaboration

Emergency Management	Resilience
Flexibility and adaptability (Demiroz & Kapucu, 2012; Kapucu et al., 2010; Van Wart & Kapucu, 2011)	Flexibility and adaptability (Ross, 2013)
Communication (Demiroz & Kapucu, 2012; Kapucu, 2011; Kapucu et al., 2010; Van Wart & Kapucu, 2011)	Communication (Khunwishit, Choosuk, & Webb, 2018; Michell, 2016; Ross, 2013)
Judgmental and analytical skills (Kapucu, 2011; Van Wart & Kapucu, 2011)	Strategic thinking (Ross, 2013)
Coordination and interoperability skills (Demiroz & Kapucu, 2012; Kapucu, 2011)	Organizing and coordinating (UNISDR, 2012) (Khunwishit et al., 2018)
Developing relationships (Kapucu, 2011)	Developing relationships (Michell, 2016)
Articulating mission and vision (Caro, 2015; Karaca et al., 2012; Lester & Krejci, 2007; Van Wart & Kapucu, 2011)	Experimenting (Khunwishit et al., 2018)
	Vision (Lin Moe, 2012; Michell, 2016)

LEADERSHIP IN RESILIENCE

Emergency management is an established function within the public sector and as a profession (Kapucu, 2011). Resilience, however, is an emerging domain. In recent years, local and state governments have established resilience positions, and hired Chief Resilience Officers, resilience strategists, resilience planners, and resilience analysts. The literature on resilience as a public sector function is also sparse, with even fewer studies that have examined leadership within the resilience domain.

Research by Ross (2013) identified four attributes of community resilience that provide some guidance as to relevant leadership in collaborative settings for resilience activities. These attributes include the use of improvisation to identify solutions; coordination of resources to meet community needs; community engagement to generate buy-in from decision-makers, critical stakeholders, and community groups; and endurance and an emphasis on long-term solutions. From these attributes and extending from our understanding of leadership in emergency management, we suggest that resilience leadership includes several skills and competencies including flexibility and adaptability to allow for improvisation, coordination, persuasive communication to increase support and buy-in, and strategic thinking for long-term focus.

The United Nations International Strategy for Disaster Reduction (2012) identified 10 essential tasks for disaster resilience leadership at the local government level to reduce risk and enhance adaptive capacity. Of these essential tasks, several are relevant for resilience leadership in a collaborative setting, including organizing and coordinating for resilience, and incorporating the needs and participation of stakeholders. Lin Moe (2012) identified developing and articulating a long-term vision as a critical component of leadership in resilience.

In the context of urban water resilience, (Michell, 2016) identified the critical role of Chief Resilience Officers (CROs) in bringing together a wide array of stakeholders and inspiring them to a shared vision and instigate governance that enables collaboration. He notes that “it is vital that CROs build relationships and formulate innovative resilience strategies.” Through effective communication the CRO ensures efficiency by reducing duplication and promoting synergy (Berkowitz, 2014; Michell, 2016).

Finally, Khunwishit et al. (2018) measured disaster resilience leadership at the local government level using seven abilities. From these abilities we determined that four were relevant to leadership in a collaborative environment, including inspiring, influencing, and enlisting stakeholders; working and coordinating with multiple sectors and disciplines; willing to experiment, pursue new ideas, and take risks; and communicating effectively and engaging stakeholders.

As this limited body of research shows, the skills and core competencies for resilience leadership in collaborations are similar to those associated with leadership for collaborative emergency management.

EMERGENCY MANAGEMENT AND RESILIENCE IN A POST-COVID WORLD

Introduction of the COVID-19 virus and the subsequent pandemic has caused ripple effects across communities in the U.S. and beyond. Yusuf et al. (2020) examined the compound hurricane-pandemic threat to coastal communities in the U.S. and identified intergovernmental and cross-sectional coordination of emergency management as a challenge. Specifically, they note that collaboration along localities, state agencies and the federal government are expected to grow, but that effective response should continue to involve collaboration with non-profit, faith-

based, and humanitarian aid organizations. Furthermore, the issues and challenges associated with compound threats such as those brought on by a pandemic “requires an extended list of actors and organizations from across these multiple sectors beyond those who would normally respond to an individual disaster” (p. 171). Collaborations for emergency management and resilience in a post-COVID environment, therefore, may have additional challenges that must be addressed by leaders. Our research will explore the impacts of COVID-19 on collaborations in these two domains and how the virus and resulting pandemic have affected, if at all, how emergency management and resilience leaders collaborate.

METHODOLOGY

This study utilizes interviews with emergency management leaders and resilience professionals in Mid-Atlantic states. The research methodology and interview protocol were reviewed and approved as human subjects research exempt. A preliminary list of contacts was developed from lists available through the state emergency management agencies (on their websites) and emergency management associations. The population consisted of those in a leadership position (director or assistant director level) at both state and local levels. Referral sampling was utilized by the researchers seeking additional contacts through interview subjects. Researchers sent direct emails asking for interview participation while providing information about the study.

Interviews were conducted via Zoom with three emergency managers and three resilience professionals who are currently serving in leadership positions. Two of the emergency managers were serving in local government while another was in a state agency. All three resilience professionals were serving in local governments. Interviews began with notification of consent

from the participants, and then followed a semi-structured protocol with interview questions pre-determined in advance based on the literature and research question addressed.

Interview questions consisted of seven open-ended questions that were oriented towards collecting information about leadership experiences and perceptions of emergency management and resilience leaders. The interviews took between 45 to 60 minutes each. The interviews were voice/video recorded and transcribed.

We utilized an inductive approach to analyze the data under three themes. Core leadership competencies were identified by analyzing responses to the interview question: “What do you think are the four most important core competencies for leadership?” Then, we used the interview question “What has helped you be successful in collaborating?” to identify the key skills for collaboration. Finally, we used the interview question “How has COVID-19 changed how you lead and collaborate with others?” to explore how collaboration skill sets have changed in a world post-COVID-19.

RESULTS AND FINDINGS

We discuss our results and findings in terms of three key themes: (1) leadership core competencies; (2) key skills for collaboration; and (3) collaborations in a post-COVID environment. An important key finding is that in the specific context of a collaborative environment, emergency management and resilience leaders identified similar competencies and skills. This is not an entirely surprising finding, as our review of the literature and understanding of the practices of emergency management and resilience show that despite the differences in planning time horizons (shorter-term for emergency management and longer-term for resilience), the underpinning philosophy for collaboration and the expectation for participation by different

partners and stakeholders, are consistent across both emergency management and resilience. Empirically, our analysis bears these assumptions out and suggest more similarity than differences across the two domains.

Leadership Core Competencies

Core competencies identified by interview subjects varied depending on each leader's perceptions of the leadership core competencies. Soft skills and interpersonal skills were the major core competencies mentioned by more than one of the emergency management and resilience leaders we interviewed. For example, one resilience professional mentioned "listening and authentically engaging with different constituencies" as a key skill. Another example from an emergency management director, he mentioned, "I'm a director for the department and I'm essentially trying to get other directors, we're all on the same plane to do certain things. That takes interpersonal skills as a core competency." In addition to those interpersonal skills, one respondent mentioned that "we have to be flexible, adapt, and overcome whatever comes to our way," which was consistent with the response by another respondent of "be willing to make adjustments based on new information." Two of the emergency managers interviewed agreed that being flexible and making adjustments to existing plans is important.

Another respondent expressed that collaboration is a core competency, and critical for getting other directors (of other government agencies or partner organizations) to do certain things. One respondent mentioned "strategic thinking" or "the ability to think what the long term vision is." This respondent added "relationship building" as a core competency needed to be able to implement the strategic vision. Another important core competency as mentioned by respondents is the "continuous cycle of learning and learning and relearning." One respondent

added the responsibility of producing high-quality services for the citizens and stakeholders. Another respondent added “you need to be visible,” referring to being upfront and letting your followers know that you are engaged with them on addressing the issues. One of the resilience professionals mentioned that “you have to be forward-looking and be a system thinker.” Another core competency mentioned by the respondent is “be open to bring people to the table and seek solutions collaboratively because no one is an expert in all of these things.”

Key Skills for Collaboration

One of the respondents pointed to “Being inclusive, having those experts, those who represent different parts of the community to the table” as being a key skill needed for collaboration. Recognizing that collaboration involved “working together, [but] no authority over anybody,” the respondent further explained collaborative work as requiring people to talk together about what needs to be done and the best way to do it. One example of collaborative efforts provided by one emergency manager is the use of the organization’s emergency management advisory committee to ensure feedback is received from a large group of stakeholders across the organization.

Another key skill for collaboration that was mentioned by a respondent is “relationship building which means meeting people, going to planning meetings together, going to lunch with folks.” One respondent identified the ability to think strategically and to be able to show evidence of products or outcomes as necessary to have strong relationships. Using the locality’s resilience strategy as an example, one interviewee highlighted the need for collaborating because the “resilience strategy is not an easy one [to accomplish].” This resilience professional further explained that strategic resilience requires collaboration from city departments, residents, and

political leaders, each having to take on different responsibilities. Build productive work relationships is critical for this collaboration.

One important element of successful collaboration as mentioned by multiple respondents is “communication skills.” Part of the communication skills is listening rather than speaking, since one respondent stated, “if you are talking, you are really not learning anything.” Another aspect of communication that is key for successful collaboration is what one emergency manager referred to as “just being willing to have honest dialogue” about the challenges and “don’t try to sugarcoat it for folks.”

One of the respondents expressed that “soft skills have helped” by overcoming the challenge of disagreements among team members. This respondent had to manage two people who did not like each other, and he noted that “you’re going to need both parties to come to the middle and collaborate on whatever the issue is, so breaking down those stovepipe barriers and bringing people in.”

How Collaboration has Changed Post-COVID-19

One interviewee explained that COVID-19 was a big challenge: “Zoom is going to save a lot of people a lot of money, and it is a great efficiency but you can’t replace the interpersonal relationships that we shared when meeting one on one.” The respondent added that “when we had to change things to a more virtual platform, that did make things a little bit more challenging.” Accordingly, information technology skills could have helped the respondent be more effective. Another respondent similarly explained how difficult it is to use soft skills to bring people together through technologies such as Zoom or WebEx. Specifically, the respondent mentioned the difficulties of communication with others, as “a lot of times on these big meetings

people don't even turn their cameras on, so you have no idea if they're engaged or not."

However, one of the respondents was supportive of communication and participation via video technology and conference calls stating, "we've been able to be pretty effective even in this environment whether working from home or somewhere else."

Regarding the COVID-19 pandemic, one of the respondents stated that "it has helped the way it makes it has shone a light on the need to be strategic, it is shone the light on the need to be efficient and as organized as possible and learning as possible." In addition, the respondent further explained how COVID-19 highlights the challenges of planning under uncertainty. This emergency manager pointed to "constantly changing guidance from the Department of Health and the Centers for Disease Control and you can't ever really say that one plan that you have is final because it's constantly changing to keep pace with the newest guidance and regulations that are coming out." One of the emergency managers identified that, "the COVID-19 pandemic has been a tremendous eye-opener and has shifted all of us into uncomfortable and unknown positions in taking on leadership roles that were not initially expected when first taking on this job. But we have a lot of coordination." The respondent explained the coordination process by having weekly meetings with the management incident team as well as the emergency management advisory committee. One of the leaders discussed taking greater responsibility to support and collaborate with stakeholders, noting the importance of "always checking in [with] your folks, checking on those volunteer organizations with whom we work to make sure that they're doing okay and they still feel valued after all this time." Another respondent mentioned that the COVID-19 pandemic is "shedding a lot of really stark light on who has power and [generating] discussions, who we prioritize, and that uncomfortableness, it tends to be the squeaky wheel and the squeaky wheel tends to be someone who knows how power works."

CONCLUSION

Through inductive analysis, this study investigated the skills and competencies that emergency management and resilience leaders need to be successful in collaborations to deal with emergencies and disasters today and in a post-COVID world. Emergency management is a crucial public sector function to manage risk and impacts of emergencies or disasters. In the longer term, resilience as a function supports emergency management by investing in adaptation and mitigation to reduce risk and enhance ability to recover. Leadership among resilience professionals and in the resilience domain has been studied to a much lesser extent than in emergency management. However, resilience and emergency managements have much in common and our findings show parallels between leadership skills and competencies needed for collaboration in both domains.

Skills and competencies for effective leadership in collaborative environments for both emergency management and resilience domains were found to be similar. This study identifies key skills for a successful collaboration. These skill sets include: being an inclusive leader, working collaboratively with others with equal authority, consideration of stakeholder feedback, relationship building, strategic thinking, communication skills, and other soft skills. Building off these skills, we found several leadership core competencies: soft and interpersonal skills, flexibility and adaptability, strategic thinking, relationship building, and continuous learning.

Our findings are in line with the literature. Leaders are required to have critical thinking and analytical skills to enable decision making. Leaders should emphasize communication and coordination practices to ensure effective collaboration. Furthermore, these leadership skills and competencies for collaboration complement other skills and competencies needed for emergency

management, such as organizational management, interdisciplinary approach to problem solving, and community sensitive and environmental practices.

Emergency management leaders should focus on developing key competencies that are needed for effective collaborations. The development of leadership competencies is needed for successful and sustained collaboration. Creating comprehensive leadership development can benefit not only developing leaders but also resilience professionals. Leadership training should focus on workers in the emergency management and resilience field to improve collaborations from building relationships and initiating partnerships, developing and articulating shared vision, and coordination and communication to increase effectiveness of collaborations. Learning and training are crucial in leadership development. Practice-based experience and education are also key factors that enhance the development of collaboration competencies among leaders in emergency management and resilience.

COVID-19 has challenged emergency management leaders and resilience professionals to collaborate and communicate with others. One challenge respondents faced was communicating virtually with people during COVID-19. Some leaders who had experience with virtual communication skills were better at tackling this challenge. Our analyses offer important insight into the need for training on using virtual platforms and how to transition from face-to-face meetings to virtual platforms while continuing successful collaborations. Moreover, learning how to deal with uncertainties of an ever changing public health crisis was a challenge by one of the leaders.

A limitation of this study is that our results and findings are limited to the individual experiences of our study participants. Furthermore, the small number of participants makes our findings less generalizable. Our future research plans include a large sample of emergency

management and resilience professionals. This study was limited to collaborative emergency management and resilience contexts. Future research can explore different contexts and their associated leadership skills and competencies. Finally, given the scant literature on resilience as a profession, future research should explore in more detail the competencies, skills, and needed training for resilience professionals.

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